Application No. 10/003,042
Filed: December 7, 2001
Group Art Unit: 1762

REMARKS

1. This is in response to the Office Action mailed April 11, 2003. Claims 1-29 remain pending in this application.

2. Applicant requests reconsideration of the rejections under 35 USC 112, second paragraph.

a. Applicant has amended claims 1-7, 9, 11, 12, 16 and 20.

b. The language in claims 11 and 12 has been clarified, and claim 21 seems to be acceptable in its original format.

3. Applicant requests reconsideration of the rejections under 35 USC 102(b) and 35 USC 103(a).

a. Gruen discloses transfer of energy to gaseous fullerene molecules as by a laser, which energy can include electron attachment, so that the resulting energized fullerene molecules or fragments then deposit on a surface to form a diamond or diamond-like film. On the other hand, in the instant invention, a nongaseous chemical is deposited on a surface prior to electron attachment, and electron attachment takes place when the chemical substance leaves the surface, an entirely different process having an entirely different goal and usefulness. The target chemical herein is nongaseous and Gruen's chemical is gaseous. Gruen uses

MEINGARTEN, SCHURGIN,
GAGNEBIN & LEBOVICI LLP
TEL. (617) 542-2290
FAX. (617) 451-0313

energy to place fullerenes or fullerene fragments on a surface while we use energy to remove a chemical substance from a surface. Gruen seeks to make a film on a substance whereas we seek to detect a chemical substance by having it leave a surface. The two inventions provide different processes and purposes.

While Gruen indicates that metal substrates are appropriate for fullerene ion deposits, the surface is not specified in the Description, Examples or Claims of Gruen. Indeed, since surface growth takes place in Gruen (e.g. see column 3 lines 1-45, or see Claim 1 where thickness is emphasized), then the process of Gruen is meant to continue on a diamond or diamond-like surface, further emphasizing that a metal surface is not required. One skilled in the art would conclude that Gruen intends the invention to apply to any surface.

Thus the instant invention is not anticipated by Gruen. In addition, it would not be obvious to one with ordinary skill to attempt the method claimed herein.

b. Cottrell discloses the use of improved matrices for laser desorption mass spectrometry. Cottrell's matrices enable desorption with lower energy photons at 337 nm whereas prior matrices required higher energy photons at 266 nm. The 337 nm photons are less expensive to provide. The new matrices are specified to contain molecules in which an aromatic ring is

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GAGNEBIN & LEBOVICI LLP
TEL. (617) 542-2290
FAX. (617) 451-0313

substituted with one or more groups, where the one or more groups possess an electron pair on an atom adjacent to the ring. However, the presence of electron pairs in the matrix compound does not imply electron transfer, and there is no implication or mention or concept of electron transfer in Cottrell. Instead the one or more groups with an electron pair increase the ability of the compound to absorb the lower energy photons, which is the purpose of the Cottrell invention. Thus, the instant invention is not anticipated by Cottrell.

c. While Hutchens and Koster disclose that metal surfaces can be used in their inventions, such surfaces are merely an option. For example, in Hutchens see column 23 line 25-column 24 line 30, or see claim 13. In Koster, see column 14 line 1-6.

Indeed, even when metal surfaces are cited as options, a variety of metal surfaces are cited as examples. This is because the metal surfaces are not considered to play any special role in the desorption or ionization process, unlike the use of electron-donating surfaces in our invention. Instead, in Hutchens and Koster the metal surfaces simple support a surface matrix or affinity substance. Electron attachment is not mentioned or implied in Hutchens or Koster in regard to any of the molecules or surfaces or processes employed. Instead, the instant invention relies on electron attachment for both desorption and ionization.

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TEL. (617) 542-2290
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Combining Cottrell with Hutchens and Coster also does not teach or imply our invention, since electron attachment does not appear nor is it implied in Cottrell, Hutchens or Coster individually or collectively.

Although Cottrell, Hutchens and Coster employ analogous materials relative to the instant invention, this does not lead to an expectation of completely analogous properties and characteristics between this other art and that of the applicant. For example, while combining anionic and cationic groups may lead to an expectation of ion pairing, a common event, it does not at all lead to an expectation of electron transfer, an unusual event. In general, it is well known that analogous materials and conditions in the physico-chemical world can lead to very different results. The particular materials and conditions, in particular combinations, chosen by the applicant provide the unusual results of this invention that are not analogous to those revealed or suggested by Cottrell, Hutchens or Coster individually or collectively. These other inventors never select or suggest the special materials and conditions that are essential to achieving the invention of the applicant.

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The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

POGUANG WANG ET AL

By: _____
Stanley M. Schurgin
Registration No. 20,979
Attorney for Applicant(s)

WEINGARTEN, SCHURGIN,
GAGNEBIN & LEBOVICI LLP
Ten Post Office Square
Boston, MA 02109
Telephone: (617) 542-2290
Telecopier: (617) 451-0313

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